

Postcolonial Evolution of Water Rights in India and the United States

Jesse J. Richardson

1 Introduction

Both India and the United States adopted the English common law for water rights upon gaining independence from England, although these events occurred 171 years apart (1776 in the United States, and 1947 in India). By the time India gained independence in 1947, many states in the United States had already evolved away from the English common law for water rights, particularly with respect to groundwater. However, to this day, most states in India have not altered the English common law, despite several prominent problems. This chapter explores the evolution (or lack thereof) of water rights in both countries and attempts to explain the stark differences.

First, the chapter reviews general demographic and water use data from each country to compare the two. Second, a Virginia case is used to illustrate the issues when deciding whether to adopt the English common law. Although the case focuses on groundwater rights, its analysis applies to a broad spectrum of cases. Indian cases do not engage in such analysis, perhaps due to the India Easements Act of 1882.

Next, the chapter addresses surface water. States in India and the eastern United States use riparian rights adopted from the English common law. States in the western United States have, for the most part, rejected riparian water rights for prior appropriation, explaining that the conditions in those states differ so much from the

J.J. Richardson (✉)
West Virginia University College of Law, Morgantown, USA
e-mail: jesse.richardson@mail.wvu.edu

conditions in England that a riparian right approach is not appropriate. However, some western states still recognize riparian rights that were established prior to the switch to the prior appropriation doctrine.

Although states in India may recognize that riparian rights fail to adequately address the Indian reality, the country appears to still prefer the “natural flow” theory (*Karathigundi Keshava v. Sunnanguli Krishna Bhatta* 1945). The natural flow theory gives the landowner the right to the full flow of the watercourse. Most states in the United States have switched to the “reasonable use” rule, allowing some reasonable reduction in flow for use of the water by upstream owners.

Next, the chapter discusses percolating groundwater (groundwater not in identified streams or channels). In contrast to surface water, percolating groundwater is considered part of the soil under the absolute dominion rule. This rule, as first stated in *Acton v. Blundell* (1843), is referred to by American courts as the “English Rule.” In the United States, however, courts generally have adopted a less severe form of the rule, finding liability for the misappropriation of percolating groundwater only if the act was malicious (Kelly 2016).

In the early 1900s, American courts began to evolve away from the English Rule, with many courts adopting the reasonable use rule, also referred to as the “American Rule.” The American Rule limits how water withdrawn from a property may be used (Ibid). In contrast, states in India have remained committed to the absolute dominion rule as stated in the English common law.

The chapter then moves to a discussion of statutory and policy changes to the common law in each country. Both countries have utilized a form of “regulated riparianism” by adopting policy, statutory and regulatory programs to supplement the common law. In India, this movement takes the form of state water policies, guided by a National Water Policy. Most Indian state water policies parallel the 2002 National Water Policy (Government of India, Ministry of Water Resources 2002), which is remarkably similar to the statutes passed in eastern states in the United States. Both provide priorities for water use and allocation (Richardson 2015).

Finally, the chapter concludes by presenting lessons learned from the different paths of the two nations. These lessons can help both nations develop more sustainable water rights systems.

2 Overview of India and the United States

2.1 United States

The United States spans 9,833,517 km², including 9,147,593 km² of land mass and 685,924 km² (6.97%) of water, ranking as the third largest country in the world. The 2010 census estimated the country’s population as 309,349,689, also third most in the world. However, with only 35 people per square kilometer, the United States ranks 180th in terms of density. Estimated (2016) GDP (Gross Domestic Product)

per capita amounts to \$57,220 (10th). Ranked by nominal GDP, the economy is the largest in the world. New York City is the country's largest city, with a population of 8,550,405 (estimated, 2015). The economy experienced rapid growth in the nineteenth century, and is now an established industrialized country with stable overall GDP growth.

The United States includes 50 states, a federal district, five major self-governing territories and a variety of possessions. Water quality law mainly involves national law, whereas water allocation rules mainly occur at the state level. The eastern United States and western United States (roughly divided by the Mississippi River), have different water allocation regimes, with the east primarily governed by riparian or reasonable use rules and the west primarily using prior appropriation. Thirty-one states use riparian rules for surface water and/or groundwater. The remaining 19 states, mainly in the western United States, use prior appropriation, where one acquires a right to use a certain amount of water by using the water. In times of shortage, the water is allocated based on the time that the use was established. Priority is given to the earliest use and then each subsequent use until all of the water is allocated, potentially leaving some later users with no water.

Freshwater withdrawals in the United States totaled 306,000 million gallons (about 1.6 km³) per day in 2010. Thermoelectric power generators withdrew 38.2% of this total. Irrigation accounted for 37.2% of withdrawals, and 2000 million gallons a day were withdrawn for livestock watering. Therefore, thermoelectric power and agriculture accounted for almost equivalent withdrawals. Of the withdrawals, 75% came from surface water (with 29% of this amount going to agriculture) and 25% came from groundwater (with 64% of this amount going to agriculture).

The climate of the United States varies greatly, ranging from semiarid to arid in much of the West, to Mediterranean on the coast of California, to subarctic Alaska and tropical Hawaii, to humid continental, humid temperate, and humid subtropical in the East. Vast differences in terrain also exist, ranging from mountains to seashores.

2.2 India

India is a federal republic governed by a parliamentary system. India ranks as the seventh largest country in the world and spans 3,287,263 km². This figure includes 2,864,021 km² of land mass and 302,393 km² (9.55%) of water. The 2011 Census estimated the country's population at 1,210,854,977, ranking second in the world (first among democracies) and amounting to a density of 389 people per square kilometer, or 31st most dense. The per capita GDP of \$1820 ranks 122nd. In 2015, India was the world's seventh largest economy measured by per capita GDP, and third largest measured by Purchasing Power Parity. The largest city, Mumbai, has a population of 18.4 million (estimated, 2013).

India includes 29 states and 7 Union Territories, with state law primarily governing water allocation. Each state has different water rules. In 2010, freshwater withdrawals totaled 2.09 cubic kilometers per day, of which agriculture accounted for 91%, industry 2% and municipalities 7%.¹

The Indian economy is classified as a newly industrialized country and a developing economy. According to the International Monetary Fund's World Economic Outlook (April 2016), India's economy is the fourth fastest growing in the world. This growth contrasts greatly with the growth of the country's economy during British Rule and in the decades that followed independence.

There is no doubt that our grievances against the British Empire had a sound basis. As the painstaking statistical work of the Cambridge historian Angus Maddison has shown, India's share of world income collapsed from 22.6% in 1700, almost equal to Europe's share of 23.3% at that time, to as low as 3.8% in 1952. Indeed, at the beginning of the 20th century, "the brightest jewel in the British Crown" was the poorest country in the world in terms of per capita income.

(Singh 2005)

The 30 years following independence have been characterized as showing a "Hindu rate of growth," referring to the extremely low rate of growth compared to other Asian countries (Panigariya 2008)

Like the United States, India hosts a wide variety of climates, "from arid desert in the west, alpine tundra and glaciers in the north and humid rainforests in the southwest and the island territories" (Wikipedia, https://en.wikipedia.org/wiki/Climate_of_India). The landscape also varies from deserts to the Himalaya Mountains.

3 Deviation from the English Common Law in the United States

The decision-making process involved when a United States court deviates from English common law is well illustrated in a Virginia case and laid out below. Indian courts appear to be beginning to approach the English common law in a similar way.

The court first recognized that although Virginia had adopted English common law by statute, its adoption took place in a situation not applicable to the present time or particular state (*Costello v. Frederick County Sanitation Authority* 1999). Although the Rule had been rejected by many states and authorities, the court pointed out that Virginia had adopted the English common law by statute, which might be dispositive (Code of Virginia 1950). However, the court then proceeded to examine the history, intent, and purpose of the statutes (Ibid).

Reviewing case law on interpreting the adoption of English common law, the court stated that the "true holding" of these cases appears to be "that for a common

¹The data fail to specify whether these figures refer to withdrawals or consumption.

law rule to be binding upon the courts in the Commonwealth of Virginia, it must be one that is well established, that goes back ‘to the time that the memory of man runneth not to the contrary’ and have a lasting and enduring value which is recognized by the English courts and presumably by many American courts” (*Costello v. Frederick County Sanitation Authority* 1999). In other words, the court suggests that in order to uphold English common law, it must be well established, long-standing and must have present value. Further details from the case state:

Before English common law can be applied in Virginia it must be analyzed in light of Code § 1-20 and the cases interpreting that code section. According to the code, English common law cannot be applied if it is “repugnant to the principles of the Bill of Rights and the Constitution.” Nor can it be applied if it is “altered by the General Assembly.” In addition to the statutory provision, *Foster v. Commonwealth*, 96 Va. 306, 31 S.E. 503 (1898), sets forth yet another limitation on the use of English common law. In *Foster*, we considered the predecessor to Code § 1-10. We stated that though the statute, aside from its express limitations, appears to adopt English common law “generally, and without a qualification,” this is not in fact the case.

(*Weishaupt v. Commonwealth of Virginia* 1984)

Therefore, that Virginia courts may “adopt from English common law those principles that fit our way of life and ... reject those which do not” (*Costello v. Frederick County Sanitation Authority* 1999).

The analysis in *Costello* mirrors that of other courts considering water allocation doctrine. Most courts in the United States do not feel bound to adopt the English common law if such law fails to address the present conditions in that state, even in the face of statutory provisions much stronger than the ones at issue in Virginia.

4 Surface Water

4.1 Introduction

Although some controversy exists as to whether English common law forms the source of riparian water rights (Getzler 2004; Dellapenna 2011), this chapter assumes that riparian water rights originated in English common law. English common law recognized a natural right to water in a watercourse in the 1600s (*Suxy v. Pigot* 1625; Getzler 2004). The right later became to be known as riparian rights, allowing the owner of land abutting a waterway to an uninterrupted flow of the watercourse, regardless of the rights of others (Ibid). Many states in both the United States and India adopted this common law upon independence.

However, after this initial adoption, the states in the two nations parted ways. This section examines how Indian states have remained true to the adopted common law riparian rights, while many states in eastern United States have altered those rights. Further, most states in the western United States have rejected common law riparian rights outright.

4.2 *United States*

4.2.1 Eastern United States

In the United States, most states in the east use the riparian water rights doctrine, although some states have gone from the “natural flow” rule to the “reasonable use” rule.² The natural flow doctrine, also called the “English Rule” in the United States, provides that a landowner has the right to have the water flow through the property undiminished in quality or quantity (Kelly 2016). The reasonable use theory gives each riparian the right to reasonable use of the water, sharing equally with other riparian owners, even if the reasonable use diminishes the natural flow (Ibid).

A total of 30 states use the riparian rights rule for surface water.³ As originally set out, riparian rights adhered to the natural flow doctrine. However, almost immediately after the English common law was adopted in the United States, courts began to create exceptions to the “natural flow” rule, notably including an exception for domestic use (Ibid). Courts that failed to modify the natural flow doctrine instead generally rejected it. Within just 5 years of the formation of the natural flow theory in the United States, courts had already begun abandoning it for the reasonable use doctrine (*Cooper v. Hall* 1832). Horowitz opined that the evolution from natural flow to reasonable use originated in American courts as a way to advance development given the circumstances of the nation at that point (Horowitz 1977).

Similar to natural flow, many courts have created exceptions for the “reasonable use” rule. “Natural flow” and “reasonable use” have therefore become nearly indistinguishable (Ibid). The natural flow theory is still promoted by some scholars, and the term is still used by some courts, mostly to support aesthetic or ecological concerns (Ibid).

4.2.2 Western United States

When the western United States began to experience conflicts over water allocation, some states initially adopted riparian rights. However, most of these states quickly switched to the prior appropriation doctrine, where water rights are not tied to land ownership, but are instead based on the “first in right, first in time” principle. Other western states adopted prior appropriation from the outset. Although in many of

²No source documents which states have made the switch, but the literature appears to assume that most or all states in the United States now use the reasonable use riparian rights doctrine, or have modified the natural flow rule to the degree that it now appears identical to the reasonable use rule.

³Alabama, Arkansas, Connecticut, Delaware, Georgia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia and Wisconsin.

these cases, the state had arguably adopted the English common law rule of riparian rights, leaving courts to use various methods to avoid that imposition.

The doctrine of prior appropriation is defined as follows:

A property right in the use of water is created by diversion of the water from a stream (or lake) and its application to a beneficial use. Water can be used at any location, without regard to the position of place of use in relation to the stream. In the event of a shortage of supply, water will be supplied up to a limit of the right in order of temporal priority: the last man to divert and make use of the stream is the first to have his supply cut off.

(Meyers 1971)

Nine states have completely supplanted common law riparian rights with the prior appropriation doctrine (Thompson et al. 2013).⁴ Mississippi and Texas also use prior appropriation for surface water (Richardson 2014). Eight western states displaced common law riparian rights, but still honor riparian rights established before the adoption of prior appropriation, or where title was acquired from the federal government (Thompson et al. 2013).⁵

Colorado was the first state to completely supplant common law riparian rights with the prior appropriation doctrine. The Supreme Court of Colorado, despite 1861 and 1862 Territorial Acts that appeared to adopt the riparian rule, concluded that the English common law simply did not fit the very different conditions in that state.

the common law doctrine giving the riparian owner a right to the flow of water in its natural channel upon and over his lands, even though he makes no beneficial use thereof, is inapplicable to Colorado. Imperative necessity, unknown to the countries which gave it birth, compels the recognition of another doctrine in conflict therewith. And we hold that, in the absence of express statutes to the contrary, the first appropriator of water from a natural stream for a beneficial purpose has, with the qualifications contained in the constitution, a prior right thereto, to the extent of such appropriation.

(*Coffin v. Left Hand Ditch Co.* 1882)

In an even clearer example of dismissing an earlier adoption of the English common law, the Nevada Supreme Court, overruling a prior decision, declared that prior appropriation had always been the “universal custom” in the West, and in Nevada (*Jones v. Adams* 1885). Just 13 years earlier, the court had ruled that the English common law of riparian rights applied in that state (*Vansickle v. Haines* 1872).

Justice Holmes perhaps best stated the American approach to the adoption of English common law of water allocation. In a United States Supreme Court case addressing a claim that Arizona territorial law that adopted the common law of England, with some limitations, Justice Holmes stated that adopting English common law does not mean “that patentees of a ranch on the San Pedro are to have

⁴Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming are known as “Colorado doctrine states”, as Colorado was the first state to eliminate riparian rights and replace that system totally with prior appropriation.

⁵California, Kansas, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota and Washington are known as “hybrid doctrine” states.—

the same rights as owners of an estate on the Thames” (*Boquillas Land & Cattle Co. v. Curtis* 1909). Instead, the law merely adopted a “general system,” as opposed to another general system (in this case, Spanish-Mexican) (*Ibid.*).⁶

4.3 India

Common law has governed water allocation in India since at least the late nineteenth century (Cullet and Koonan 2011). Surface water rights in India are connected to ownership of land and are usufructuary rights, meaning that the landowner can use the water, but do not own the water (*Ibid.*). As is typical in riparian rights, the owner of Indian land abutting a surface waterway holds riparian rights, or the right to take water from a stream, with limitations (Tyler 2009, citing *Secy Of State v. Kannepalli Jankiramayya*). Although riparian rights are codified in Section 7 of the Indian Easements Act, 1892, numerous court cases have interpreted and outlined the rights (Cullet and Koonan 2011). Riparian rights constitute property rights, not “mere shadowy privileges” (Tyler 2009).

Illustrations (h) and (i) to Section 7 of the Indian Easements Act, 1892, appear to codify the natural flow form of riparian rights. However, illustration (j) acts to limit the doctrine by requiring “material injury” to the downstream owner for a cause of action, at least in certain situations.

Section 7(b) of the Indian Easements Act, 1892, provides that

Easements are restrictions of one or other of the following rights (namely):

(a) Exclusive right to enjoy. - The exclusive right of every owner of immovable property (subject to any law for the time being in force) to enjoy and dispose of the same and all products thereof and accessions thereto.

(b) Rights to advantages arising from situation. - The right of every owner of immovable property (subject to any law for the time being in force) to enjoy without disturbance by another the natural advantages arising from its situation.

The pertinent illustrations provide that

(h) The right of every owner of land that the water of every natural stream which passes by, through or over his land in a defined natural channel shall be allowed by other persons to flow within such owner’s limits without interruption and without material alteration in quantity, direction, force or temperature; the right of every owner of land abutting on a natural lake or pond into or out of which a natural stream flows, that the water of such lake or pond shall be allowed by other persons to remain within such owner’s limits without material alteration in quantity or temperature.

(i) The right of every owner of upper land that water naturally rising in, or falling on such land, and not passing in defined channels, shall be allowed by the owner of adjacent lower land to run naturally thereto.

⁶Courts are split on whether statutes adopting “the common law of England” create riparian rights (Thompson et al. 2013, 207).

(j) The right of every owner of land abutting on a natural stream, lake or pond to use and consume its water for drinking, household purposes and watering his cattle and sheep; and the right of every such owner to use and consume the water for irrigating such land, and for the purposes of any manufactory situate thereon, provided that he does not thereby cause material injury to other like owners.

Explanation. -A natural stream is a stream, whether permanent or intermittent, tide or tideless, on the surface of land or underground, which flows by the operation of nature only and in a natural and known course.

Illustration (h) makes clear that the riparian rule in India uses the natural flow approach (Iyler 2009). Therefore, the riparian owner has the right to have the surface water flow through the property, undiminished in quantity and unpolluted (Ibid). Illustration (j) seems to prioritize natural flow rights by arguably allowing riparian owners, in the first clause, to withdraw as much water as needed for drinking, household purpose, and stock watering. The second clause allows the riparian to use water from the stream for irrigation and manufacturing purposes, but limits that use to those that do not cause “material injury” to other riparians.

Puthucherril argues that illustration (h) limits the right of a riparian to use water for drinking, household, and stock watering purposes to those uses that will not impact natural flow (Ibid). However, at least one court holds otherwise, providing that the use of water for domestic purposes may impact natural flow without liability (*State of Bombay v. Laxman Sakharam Pimparkar* 1960).

Note, however, that Section 2(a) of the Indian Easements Act, 1892, arguably prevents states from regulating surface water.⁷ Section 2 (a) provides that

[n]othing herein contained shall be deemed to affect any law not hereby expressly repealed; or to derogate from - (a) Any right of the Government to regulate the collection, retention and distribution of the water of rivers and streams flowing in natural channels, and of natural lakes and ponds, or of water flowing, collected, retained or distributed in or by any channel or other work constructed at the public expense for irrigation.

4.4 Conclusion

While courts in the eastern United States acted fairly quickly to move away from the natural flow rule in the English common law rule of riparian rights, by either swallowing the rule with exceptions or by outright rejecting the rule in favor of prior appropriation, Indian courts, as well as the legislature, have conformed to the natural flow rule. Courts in the United States appear to feel free to adapt the common law rule to the unique circumstances of the time and the location. United States courts also freely adapt water rights to the desires of the community (such as advancing the rights of industry to use the water).

⁷See, e.g., Gronwall (2008), at 339.

The Indian Easements Act, 1892, may explain the hesitance of Indian courts to likewise mold water rights to the conditions of the place and time. The national legislature may need to originate change in water rights in India.

5 Groundwater

5.1 Introduction

“[T]he rules governing subterranean water may vary depending on whether the water is “percolating” water (*i.e.*, water that seeps through the land without following a well defined course or channel) or underground water that is flowing through a reasonably well defined channel or course” (*Costello v. Frederick County Sanitation Authority* 1999, citing *Miller v. Black Rock Springs Improvement Co.* 1901).

The English common law considers percolating groundwater part of the soil and owned by the owner of the surface (*Acton v. Blundell* 1843). Disputes over groundwater withdrawals were rare, and usually occurred in the context of a landowner pumping large amounts of groundwater to rid the land of the water in order to mine minerals or use the land in some other way that required eliminating the water (Kelly 2016). English courts reasoned that since groundwater could not be seen, the properties of groundwater were not known well enough to attempt to regulate groundwater separately from the soil (Ibid). This rule has been called the English Rule and the absolute dominion rule.

Even though the understanding of groundwater has advanced significantly over the years, English courts still utilize this rule (Ibid). The rule was utilized as recently as 1987 in a case involving subsidence of neighboring property due to groundwater pumping:

As the law stands, the right of the landowner to abstract subterranean water flowing in undefined channels beneath his land ... appears to us, in the light of [common law] authorities, to be exercisable regardless of the consequences, whether physical or pecuniary, to his neighbors. Whether or not this state of the law is satisfactory is not for us to say.

(Stephens v. Anglian Water Authority 1987)

However, the rule in England has been limited in certain ways, by changing the rule for water pollution and giving local governments certain powers (Kelly 2016). English courts apply a strict liability rule to groundwater pollution (Ibid). In addition, royal and local governments also hold “extensive administrative powers” (Ibid). However, as this section sets out, India appears to still apply the English common law rule for groundwater allocation without limitations.

5.2 *United States*

Courts in the United States still refer to the rule as the “English Rule,” even though one case in the United States appears to have adopted the rule prior to *Action v. Blundell* (Ibid).⁸ “In a nutshell, the English Rule permits a landowner unlimited exploitation of the water found beneath his land. He may utilize as much of the subterranean water as he cares to for any purpose irrespective of the effect upon adjoining landowners” (*Costello v. Frederick County Sanitation Authority* 1999). One court, in adopting the rule, explained that properties applying to groundwater “are so secret, occult and concealed, that an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty” (*Frazier v. Brown* 1861).

Twenty-eight states in the United States originally adopted the “English Rule,” or the rule of absolute dominion. However, in late 1800s and early 1900s, the courts began to reject the English Rule (Levine 1984). Although the cases often fail to clearly express a rule, and disagreement exists with respect to which states retain the English Rule, the author’s research ascertains that 11 states still use the rule.⁹

Seventeen states, mostly in the east, and mostly replacing the English Rule, have adopted the “American Rule,” or the “reasonable use” rule.¹⁰ This rule limits use to beneficial uses having a reasonable relationship to the use of the overlying land (Levine 1984). Unreasonable withdrawals for use on a parcel other than that from which the water was withdrawn are prohibited (*Costello v. Frederick County Sanitation Authority* 1999).

Courts have found the English Rule to be “archaic” and not suited to the particular conditions in the United States (Ibid):

The English Rule is clearly the “English common law” rule, but it was developed in the 19th century in a land which, if anything, has too much water as opposed to too little. The fact that the English Rule has been rejected by most American states and by the drafters of the Restatement of Torts, Second is circumstantial evidence that the absolutist English rule in all of its Draconian splendor may not be a suitable rule for application in Virginia.

(Ibid)

Brentwood and Robar (2004) note that “the form and volume of groundwater found in a particular region and the period in which the region was settled” provide

⁸See *Greenleaf v. Francis*, 35 Mass. (18 Pick.) 117 (1836).

⁹Connecticut, Georgia, Indiana, Louisiana, Maine, Massachusetts, Minnesota, Mississippi, Rhode Island, Texas and Vermont have either adopted the rule or expressed a preference for the rule. Note that Vermont purports to replace the English rule, by statute, with the correlative rights rule, but the statute has not yet been applied. Note also that South Carolina has no meaningful common law for groundwater.

¹⁰Alabama, Arizona, Arkansas, Delaware, Illinois, Kentucky, Maryland, Michigan, Missouri, New Jersey, New Hampshire, New York, North Carolina, Oklahoma, Pennsylvania, Virginia, and West Virginia.

a significant indicator of the groundwater rule adopted by a particular state (Gronwall 2008).

New Hampshire was the first state to adopt the American rule, in 1862. Iowa (1894), West Virginia (1905), Kentucky (1908), and Michigan (1915) followed. By the 1930s, the American rule had been adopted by more states than had retained the English Rule (Thompson et al. 2013).

Five states use the correlative rights rule.¹¹ The correlative rights rule is similar to the reasonable use rule, but does not limit uses to the overlying property and dictates proportional sharing. The reasonable use rule, for example, allows a landowner to consume all of the water, so long as the use is beneficial, while the correlative rights rule prohibits one landowner from consuming more than a fair share.¹²

Ohio and Wisconsin use the Restatement (Second) of Torts rule. The Restatement (Second) of Torts Section 858 provides

(1) A proprietor of land or his grantee who withdraws ground water from the land and uses it for a beneficial purpose is not subject to liability for interference with the use of water by another, unless

(a) the withdrawal of ground water unreasonably causes harm to a proprietor of neighboring land through lowering the water table or reducing artesian pressure,

(b) the withdrawal of ground water exceeds the proprietor's reasonable share of the annual supply or total store of ground water, or

(c) the withdrawal of the ground water has a direct and substantial effect upon a watercourse or lake and unreasonably causes harm to a person entitled to the use of its water.

(2) The determination of liability under clauses (a), (b) and (c) of Subsection (1) is governed by the principles stated in §§ 850 to 857.

Prior appropriation controls groundwater allocation in 13 states.¹³ Finally, Florida law recognizes no common law groundwater rights, relying totally on a regulated riparian regime, while South Carolina has no meaningful common law for groundwater rights.

As states changed from the English Rule to other rules to govern groundwater rights, surprisingly few legal challenges to the change were presented. For the few legal challenges that exist, courts generally found in favor of the government (Kelly 2016).¹⁴

¹¹California, Hawaii, Iowa, Oklahoma and Tennessee. Vermont appears to have adopted the rule by statute, but the statute has not yet been applied. Nebraska uses a combination of the reasonable use rule and the correlative rights rule.

¹²See, e.g., the leadings case on correlative rights, *Katx v. Walkinshaw*, 74 P. 766 (Cal. 1903); Lukas (1982).

¹³Alaska, Colorado, Idaho, Kansas, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

¹⁴See, e.g., *Crookston Cattle Company v. Minnesota Dept. of Natural Resources*, 300 N.W. 2d 769, 774–775 (replacing the English Rule with a regulated riparian statute does not constitute a regulatory taking or violate equal protection); C.f., *Franco-American Charolaise, Ltd. v.*

The federal government holds little or no role in groundwater management in the United States (Gronwall 2008, citing Brentwood and Robar 2004). “[T]his limitation is not due to any constitutional or legal barriers but rather is self imposed and due to historical and cultural factors” (Ibid).

5.3 India

As in the United States, Indian law distinguishes between groundwater flowing in defined channels and percolating ground water, which does not flow in defined channels. Riparian rights govern the former, while percolating groundwater is considered part of the soil and belongs to the owner of the land (*Mahomedans of Lonar v. Hindus of Lonar* 1945). Paragraph 335 of *Karathigundi Keshava Bhatta v. Sunnanguli Krishna Bhatta* (1945) sets out the English Rule for groundwater in India, making percolating groundwater a “natural right” of the landowner. However, groundwater moves through the land, and Indian law recognizes what is called the rule of capture in the United States. Namely, a right of use of the water exists as the water passes through, but the landowner does not own the water in the ground (*Malayam Patel Basavana Gowd v. Lakka Narayana Reddi* 1921). “There is no limitation on how much groundwater a particular land owner may draw” (*Sukry Kurdepa v. Goondakull* 1872).

Section 7 of the Indian Easements Act, 1892, codifies the English Rule for percolating groundwater. Illustration (g) provides: “The right of every owner of land to collect and dispose within his own limits of all water under the land which does not pass in a defined channel and all water on its surface which does not pass in a defined channel.”

“[A]n adjacent landowner has no property in or right to subterranean percolating water until it arrives underneath his soil ... therefore no property or right of his is injured by the abstraction of the percolating water before it arrives under his land” (*Bradford v. Pickles* 1895).

Most commentators agree that “Indian law on property in groundwater has not undergone any reforms since colonial times.” (Gronwall 2008). Brentwood and Robar (2004) assert that the same cultural and historical factors that limit the role of the national government in groundwater allocation in the United States also applies in India (Gronwall 2008), however, constitutional and legal factors do not prevent a national government role in India (Ibid, citing Brentwood and Robar 2004).

Cases in India, however, are beginning to raise some interesting questions. First, the discussion of how conditions in India so differ from those in England, where there is no Monsoon season and dry season, in *Basavana Gowd v. Narayan Reddi* (1931)

(Footnote 14 continued)

Oklahoma Water Resources Board, 855 P. 2d 568 (finding a regulatory taking where a state statute replaced riparian rights with prior appropriation).

resembles the discussion in many American cases rejecting the English common law. The case involved water percolating in a sandy riverbed during the dry season:

the underground water to which the English cases apply is usually water between layers of subterranean rock or clay so hidden that no one can guess what their course is. In this country, it is fairly safe to say that the under-current of a river is probably flowing down the river bed and that its course is defined in the sense that one will probably be able to tap it somewhere in the river bed, and the water thus is found in, and has not left, the recognized irrigation source, namely, the river

(Ibid)

The infamous “Coca Cola case” also illustrates the tension in groundwater law in India. This case involved the rights of the landowner to withdraw large amounts of water to use in making beverages. The Perumatty Grama Panchayat had granted the company a permit for electricity to pump groundwater for the plant. When the permit came up for renewal, the Panchayat, citing groundwater depletion, drinking water shortages and environmental issues, denied the permit (Gronwall 2008). The Kerala government ordered the Panchayat to issue the permit, and the Panchayat petitioned the High Court of Kerala (Ibid).

The court decided the question of whether the Panchayat held the authority to cancel the permit based on excessive extraction of groundwater (*Perumatty Grama Panchayat v. State of Kerala* 2004). A Single Bench ruled that the groundwater withdrawal was “breaking the natural water cycle” and that the Panchayat could cancel the permit (Ibid; Gronwall 2008). This decision, however, was overruled by the Division Bench, which found that Panchayat could only prohibit the permit holder from bringing about a drought or causing an imbalance in the water table (*Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama Panchayat* 2005; Gronwall 2008). The Division Bench rejected the lower court holding and directed the Panchayat to reinstate the license.¹⁵

The first decision referred to the English Rule, and the inappropriateness of the rule in modern day India:

The principles applied in those decisions cannot be applied now, in view of the sophisticated methods used for extraction like bore-wells, heavy duty pumps etc. Further, those decisions and the above contentions are incompatible with the emerging environmental jurisprudence developed around Art.21 of the Constitution of India.

(*Perumatty Grama Panchayat v. State of Kerala* 2004)

The Division Bench failed to even refer to the English Rule, referring only to an “assumption” that a landowner can pump groundwater from beneath their property, and a limitation of “reasonableness” (*Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama Panchayat* 2005). The court then derived the standard of bringing about a drought or an imbalance in the water table (Ibid).

¹⁵The case was appealed to the India Supreme Court and is still pending.

5.4 Conclusion

Groundwater rights prove to be much more difficult than surface water rights. Courts in the United States have deviated from the English Rule often, and express little or no hesitation in doing so. Including the English Rule (which some commentators opine barely exists anymore as a practical matter), five different doctrines apply to groundwater in the United States. Even though a small number of states retain the doctrine, courts have uniformly criticized the English Rule.

Although the English Rule remains the law of the land in India, some courts, most notably in Kerala, have, at least impliedly, criticized the doctrine and suggested alternative rules. The Indian Easements Act, 1892 also impacts groundwater allocation in India by making courts hesitant to change the doctrine to fit the conditions in India today.

6 Regulated Riparianism

6.1 Introduction

Dellapenna coined the term “regulated riparianism” to refer to state statutory regimes in the United States that supplement or purport to replace common law water rights in the eastern United States (Dellapenna 1985). The term curiously includes groundwater (which is not subject to riparian rights) as well as surface water. The federal (national) government in the United States has failed to directly address water allocation issue, so has not played a role in regulated riparianism in that country.

Regulated riparianism in India appears as water policies issued by the state and national governments. The National Water Policy serves as a model for state policies, in contrast to the lack of involvement by the national government in the United States. This section describes “regulated riparianism” in the United States and India, and concludes that the two regimes are remarkably similar.

6.2 United States

States in the United States have altered the common law water rights rules since colonial times (giving preference to industrial uses) (Kelly 2016). Beginning in 1800s, states began passing statutes that gave preference to agricultural uses of water (Ibid). Statutory preferences have been utilized in eastern (riparian) states but have been unnecessary in the west because prior appropriation bases priority primarily on time only.

Nineteen states have passed water allocation rules in the eastern United States (Richardson 2015). The scope of these statutes varies: many involve permitting systems, and most include exemptions for de minimis uses. Particularly with respect to groundwater, state statutes often establish a procedure for identifying particular geographic areas where the regulations will apply.¹⁶

The Regulated Riparian Model Water Code exemplifies the state regulations on water allocation. The Model Code provides for the following preferences: (1) water for direct human consumption and sanitation; (2) water for the survival of livestock and crops (including protecting businesses from damage to physical plants and equipment due to lack of water); (3) water to “maximize employment and economic benefits in the context of sustainable development” (Dellapenna 1997). The priorities are subject to ranking by the degree of reasonableness, and temporal priority applies so long as the public interest is served equally by competing uses.

States vary slightly with respect to allocation priorities, but a consensus seems to exist on the priority laid out in the Model Act, with human needs first, followed by livestock, then crops, then other needs (Richardson 2015). The state provisions fail, however, to place limits on the water allocated to these uses, although a “reasonableness” provision may be implied (Ibid).

6.3 *India*

India first adopted a National Water Policy in 1987. The policy was updated in 2002, and again in 2012. The 2002 plan prioritized water for planning of projects as follows: (1) drinking water; (2) irrigation; (3) hydropower; (4) ecology; (5) agro-industries and nonagricultural industries; and (6) navigation and other uses. These priorities are flexible, however. The 2002 plan also referred to “water zoning,” closely linking land use and water use.

The 2012 National Water Policy establishes safe water for drinking and sanitation as a “preemptive” need. Next, three uses constitute high priority allocations: other basic domestic needs (including the needs of animals), achieving food security and supporting sustenance agriculture and minimum ecosystem needs. After these preemptive and high priority needs are met, other water should be allocated to promote its conservation and efficient use. The policy proposed differential pricing for high priority needs and economic pricing for other uses. The policy also emphasized social justice and equity concerns in determining water allocation.

¹⁶See, e.g., the Virginia Ground Water Management Act of 1992, Virginia Code Ann. §§ 62.1–254, et seq. (authorizing the establishment of ground water management areas).

Eleven states have adopted state water policies.¹⁷ Eight of these policies closely mirror the 2002 National Water Policy.¹⁸

In addition to state water policies, a “number” of states have adopted state groundwater laws modeled after the Model Bill to Regulate and Control the Development and Management of Groundwater, 2005 (Cullet and Koonan 2011). These laws apply only in designated geographic areas within the state (Ibid). Users within these areas must obtain a permit, and the permit may contain conditions regulating the use of the groundwater (Ibid).

Two state groundwater laws take different approaches than the Model Bill (Ibid). West Bengal’s law uses authorities at the state, district, and corporation level, in contrast to the Model Bill’s centralized approach (Ibid). The Andhra Pradesh law regulates land, water, and trees in an integrated law, as opposed to the limited scope contemplated in the Model Bill (Ibid).

Puthucherril argues that the riparian doctrine no longer works in India, and that regulated riparianism represents the better way forward (Iyler 2009). He cites the Maharashtra Water Resources Act, 2005, as “one of the first attempts in [India] to introduce regulated riparianism in a comprehensive manner” (Ibid). The Act seeks to equitably and sustainably allocate and manage water through a permitting system (Ibid).

6.4 Conclusion

The regulated riparian provisions in India and the United States are remarkably similar. Groundwater regulation at the state level often involves the designation of specific geographic regions for regulation. Both nations also seem to prioritize human life, animal life, and plant life, in that order within water allocation provisions. However, Indian policies often put humans and animals on equal footing. In addition, policies in India appear to be moving toward limiting agricultural uses (at least for irrigation), while policies in the United States still often give preference to agricultural uses.¹⁹

The provisions in the United States are statutory and regulatory, while the Indian provisions are policy. Despite this difference, the provisions in neither country have been enforced or even stringently applied. The difficulty of monitoring and enforcing water allocation provisions make the future of these provisions uncertain.

¹⁷Assam (2007), Himacheal Pradesh (2005), Karnataka (2002), Kerala (2008), Meghalaya (2011), Maharashtra (2003), Madhya Pradesh (2003), Orissa (2007), Punjab (2008), Rajasthan (2010) and Uttar Pradesh (1999). (the numbers in parenthesis refers the year the policy was adopted).

¹⁸Himacheal Pradesh (2005), Karnataka (2002), Kerala (2008), Meghalaya (2011), Orissa (2007), Punjab (2008), Rajasthan (2010) and Uttar Pradesh (1999). Meghalaya’s policy is identical to the 2002 National Water Policy.

¹⁹However, New Jersey and Georgia have limited agricultural uses.

7 Conclusions and Recommendations

The United States and India both adopted English common law upon declaring their independence from England. However, the two nations have taken very different approaches to the English common law of water allocation in the decades (or centuries) since independence. The national governments in each country have remained in the background. However, the Indian Easements Act, 1892, seems to have had a profound impact on the evolution of water law to the extent it codifies English common law and prevents Indian courts from deviating from the common law. United States courts have freely changed the common law to meet the different conditions and the present time.

With respect to surface water, courts in the United States quickly either amended or abandoned the natural flow rule to allow riparian owners reasonable use of surface water. In the West, courts went further and rejected the riparian doctrine as inapplicable in dry, arid regions. Indian courts have remained loyal to the natural flow doctrine, at least in part due its apparent codification in the Indian Easement Act, 1882.

Groundwater rules prove more difficult, as is the case around the globe. Courts in the United States quickly modified the English Rule, and then moved away from the rule to one of four other doctrines. Although a few states still purport to use the rule, the right to indiscriminately use groundwater has been universally criticized. Even while acknowledging the Indian Easement Act, 1882, Indian courts show more inclination to modify the English common law with respect to groundwater than with surface water, with a handful of cases appearing to attempt modification.

Both countries utilize so-called regulated riparianism, which implements laws and policies that augment, or even purport to supplant, common law rules. The countries are also similar in their provisions on water allocation and state laws that designate particular geographic areas for permitting systems. However, the rules originate with the states in America, while the national government in India provides model policies for the states.

The differences between the United States and India may result from the temporal differences in the ways the two countries have developed. Both countries share similar governance structures (particularly with respect to water allocation) and both countries have diverse climates that vary by region. However, the United States experienced rapid industrialization in the 1800s and early 1900s. This growth clearly influenced water allocation policies. In contrast, India's economy was essentially dormant under British rule and for decades afterwards. Since 1991, however, the Indian economy has grown rapidly, paralleling the growth in the United States a hundred years earlier. The time may be ripe for courts to change common law water rights in India.

Moving forward, the two countries have much to learn from each other. The United States should follow the lead of India and develop model policies and regulations for states to use in regulating water. At present, United States water policy lacks cohesion and unity. Although a parallel to the Indian Easements Act,

1892, appears unlikely (and perhaps undesirable), the federal government could provide technical support and funding as incentives to adopt national priorities and a clearinghouse for information and policies.

In India, amending the Indian Easements Act, 1892, would provide states more flexibility in dealing with water issues. However, amendment of the Act appears unlikely, as the Planning Commission rejected that suggestion when convened to review groundwater rights (Gronwall 2008). In the absence of such amendments, legislatures, and courts should explore conflicts between the English common law of water allocation and other laws and regulations in the states and the nation. Interpretations of the Indian Easements Act, 1892, vary, and the evolution of those interpretations could lead to the evolution of groundwater allocation rules. Looking to the United States courts in the late 1800s and early 1900s, during a time of rapid industrialization, Indian courts should not hesitate to change English common law to fit the needs of present day India (Horowitz 1977).

Finally, the countries can share their experiences with regulated riparianism to develop different approaches to deal with their respective rapidly changing contexts for water allocation. With increasing demands and shortages, and climate change, water law must also evolve to meet the new challenges.

References

- Brentwood M, Robar S (eds) (2004) *Managing common pool groundwater resources: an international perspective*. Praeger, Westport
- Code of Virginia (1950) §§ 1–10 and 1–11
- Cullet P, Koonan S (eds) (2011) *Water law in India: an introduction to legal instruments*. Oxford University Press, Delhi
- Dellapenna J (1985) *Owning surface water in the eastern united states*. E Mineral L Found 6: PG
- Dellapenna J (ed) (1997) *The regulated riparian model water code*. American Society of Civil Engineers, New York
- Dellapenna J (2011) *The evolution of riparianism in the United States* Marq L Rev 95:53
- Getzler J (2004) *A history of water rights at common law*. Oxford University Press, Oxford
- Government of India, Ministry of Water Resources (2002) *National water policy*. <http://www.indiawaterportal.org/articles/national-water-policy-ministry-water-resources-2002>. Accessed 14 Oct 2016
- Gronwall J (2008) *Access to water: rights, obligations and the Bangalore situation*. Linköping, LiU-Tryck. <http://liu.diva-portal.org/smash/get/diva2:18111/FULLTEXT01.pdf>. Accessed 14 Oct 2016
- Horowitz M (1977) *The transformation of american law, 1780–1860*. Harvard University Press, Cambridge
- International Monetary Fund (2016) *World economic outlook*. <http://www.imf.org/external/pubs/ft/weo/2016/01/index.htm>. Accessed 15 Oct 2016
- Iyler R (2009) *Water and the laws in India*. Sage Publications, New Delhi
- Kelly A (ed) (2016) *Waters and water rights*. Lexis Nexis, Charlottesville
- Levine S (1984) *Groundwater: louisiana's quasi-fictional and truly fugacious mineral*. La L Rev 44:1123
- Lukas T (1982) *When the well runs dry: a proposal for the change in the common law of groundwater rights in massachusetts*. BC Envtl Aff L Rev 10:445

Maharashtra Water Resources Regulatory Act 2005

Meyers C (1971) A historical and functional analysis of the appropriation system. National Water Commission, Arlington

Panagariya A (2008) India: the emerging giant. Oxford University Press, New York

Richardson J (2014) Water and economic development in Indiana: modernizing the state's approach to a critical resource (Unpublished, on file with author)

Richardson J (2015) Agricultural preferences in eastern water allocation. *Nat Res J* 55:329

Singh M (2005) Of oxford, economics, empire, and freedom, *The Hindu*, 2 October. <http://www.thehindu.com/2005/07/10/stories/2005071002301000.htm>. Accessed 16 Oct 2016

Thompson B, Leshy J, Abrams R (2013) Local control of water resources: cases and materials, 5th edn. West, Eagan

Cases

Acton v. Blundell (1843) 152 Eng Rep 1223 (Ex Cham)

Basavana Gowd v. Narayan Reddi (1931) AIR Mad 284

Boquillas Land & Cattle Company v. Curtis (1909) 213 US 339

Bradford v. Pickles (1895) AC 587 (HL)

Coffin v. Left Hand Ditch Co. (1882) 6 Colo 443

Cooper v. Hall (1832) 5 Ohio 320

Costello v. Frederick County Sanitation Authority (1999) 49 Va Cir 41 (Fred Co Cir Ct)

Foster v. Commonwealth (1898) 96 Va 306

Frazier v. Brown (1861) 12 Ohio St 294

Greenleaf v. Francis (1836) 35 Mass (Pick 18) 117

Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama Panchayat (2005) (2) KLT 554

Jones v. Adams (1885) 6 P 442

Karathigundi Keshava v. Sunnanguli Krishna Bhatta (1946) AIR (33) Mad 334

Katz v. Walkinshaw (1903) 74 P 766

Mahomedans of Lonar v. Hindus of Lonar (1945) AIR Nag 106

Malayam Patel Basavana Gowd v. Lakka Narayana Reddi (1921) AIR Mad 284

Miller v. Black Rock Springs Improvement Co. (1901) 99 Va 747

Perumatty Grama Panchayat v. State of Kerala (2004) (1) KLT 731

State of Bombay v. Laxman Sakharam Pimparkar (1960) 62 BOMLR 106

Stephens v. Anglian Water Authority (1987) 3 All ER 379 (CA)

Sukry Kurdepa v. Goondakull (1872) 6 Mad HC 71

Sury v. Pigot (1625) 79 Eng Rep 1263 (KB)

Vansickle v. Haines (1872) 7 Nev 249

Weishaupt v. Commonwealth (1984) 227 Va 389